Amendments to the Specification:

Please amend the specification with the following corrections:

Page 2, the paragraph beginning at line 17, at lines 21-22, change "acquire a limited initial images" to read "acquire a limited number of initial images" as shown in the amended replacement paragraph below:

The size and the complexity of the parameter set prohibit in most instances control through direct modification of numerical values alone. Current MRI scanners provide geometry control through a visual interface by showing the operator the location of the anticipated scan in relation to images acquired earlier in the same study. To accommodate this, scanners typically allow the operator to rapidly acquire a limited number of initial images with predetermined sub-optimal geometry at the beginning of the study. One or more of these localizer images (also referred to as scout images or reference images) may then be displayed on the computer screen, with intersection lines as overlay graphics depicting the anticipated location and orientation of the next scan while it is being defined. Either visual feedback of parameter changes is obtained by changes in position and orientation of these intersection lines, or the operator may actively interact with the intersection lines on the computer screen through pointer device manipulation, upon which the associated parameter changes are processed by the computer. A combination of these methods is the current state of the art.

Page 4, the paragraph beginning at line 20, at line 21, change "provide an solution" to read "provide a solution" and at line 29, change "to help the distinguish between" to read "to help the operator distinguish between" as shown in the amended replacement paragraph below:

The present invention provides graphical operator interface methodologies that provide a ~~an~~ solution to the problems discussed above through use of 3-D visualization technology. According to the present invention, points in relevant portions of 2-D images, such as greyvalue MRI images, of one or more localizer scans are transformed to their original location in 3-D space and displayed in an aspect view in 3-D perspective or parallel projection, retaining the graylevel- or color-coded intensity values used in 2-D views. The 3-D display may be updated in real-time to show dynamics of the anatomy, such as in cardiac applications where there are dynamics of the physical feature to be imaged or observed. Color hints such as edge decorations or modulation of the hue in graylevels may be provided to the viewer to help the operator distinguish between multiple simultaneously displayed scans. The display of individual parallel slices in a multi-slice reference scan may be interactively controlled in order to visualize only important anatomical landmarks. Furthermore, using the present invention, a virtual camera position can be changed in real-time to view the subject (e.g., anatomy) to any desired aspect.

Page 18, the paragraph beginning at line 22, at page 19, line 1, change 110 to 410 as shown in the amended replacement paragraph below:

FIG. 4 illustrates a block diagram of an interactive scan geometry definition (ISGD) system of the present invention, according to another aspect of the present invention. It will be appreciated that the block diagram illustrated in FIG. 4 accomplishes the primary functions of the system illustrated in FIG. 2. FIG. 4 shows a ISGD System **400** including a graphics engine **420** that processes image data **410** and geometry data **415** into textured computer graphics for presentation on a display **425** in a 3-D aspect view. The geometry data **415** and image data **410** represent pre-existing tomographic views used by the invention for visual reference of anatomy to be imaged. The geometry data parameters describe the geometry of pre-existing views, augmented with an array of numbers, and image data ~~**110**~~ **410**, representing the intensity values across the tomographic section as measured or computed.

Page 19, the paragraph beginning at line 13, at line 24, change 365 to 465 as shown in the amended replacement paragraph below:

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A switch **455** is utilized to control the forwarding of the inverted camera movement information to the remaining components of the ISGD System **400**. When in the switch **455** is in the first position, the inverted camera movement is forwarded to the new scan geometry **430** by which the new scan plane graphics are rendered, in which case the graphic will remain in the same position in the 3-D view. Alternatively, where the switch is in the second position, the inversion information may be processed into the geometry by which the reference plane graphics are rendered, in which case these graphics remain in the same location relative to the camera. When the switch is in the third location, the inverted transformation may be discarded, in which case operator interaction only moves the camera, and does not change the new scan geometry **130** at all. This enables the operator to manipulate the scan geometry without effecting a new image acquisition by the imaging device ~~**365**~~ **465**.

Page 19, the paragraph beginning at line 25, at line 26, change 330 to 430, at line 27, change 160 to 460, at line 27, change 165 to 465, and at line 29, change 330 to 430 as shown in the amended replacement paragraph below:

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It should be appreciated that new scan geometry is at any time completely defined by the new scan geometry parameters ~~**330**~~ **430** and the stored history of transformation parameters ~~**160**~~ **460**. This information is fed to the imaging device ~~**165**~~ **465** to generate new imaging data when desired. Interactive modification of the new scan geometry parameters ~~**330**~~ **430** is achieved by any convenient mechanisms allowed by the imaging device. In an embodiment of the invention for MRI, this occurs through interaction with input devices associated with the computer display. Examples include a keyboard, mouse pointer, trackball pointer, pen pointer device, keyboard, and the like. Additionally, the input device can include special-purpose equivalents specifically designed for interaction with 3-D rendered scenes.

Page 21, the paragraph beginning at line 7, at line 12, change "accepts one or mote" to read "accepts one or more" as shown in the amended replacement paragraph below:

According to one aspect of the invention, the IGDS system of the present invention features the availability of hardware-accelerated 2-D texture-mapped 3-D polygon model rendering. This is advantageous because software implementation of texture mapping may not be sufficient to deliver image quality with interactive performance utilizing conventional processor platforms. The visualization procedure accepts one or ~~mote~~ more time series of parallel image stacks as input, typically with 16-bit integer representation of voxel values. The visualization procedure has two primary stages, model construction and interactive rendering.

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Page 30, the paragraph beginning at line 6, at line10, change "The apparatusees and methods utilize" to read "The apparatuses and methods utilize" as shown in the amended replacement paragraph below:

Apparatuses, methods and computer program products for scan plane geometry definition in tomographic data acquisition via an interactive three-dimensional (3-D) graphical operator interface. The apparatuses, methods and computer program products are initially proposed for use in cardiac MRI, but have a much broader area of application. The ~~apparatusees~~ apparatuses and methods utilize 3-D computer graphics aspect views of slice planes to show a new scan, represented as semi-transparent uniformly-colored planes. Intersections of these planes with opaque texture-mapped gray-level views of previously acquired images enable the orientation of a new scan to be viewed in a much more intuitive fashion. Advantageously, the apparatuses and methods of the present invention provide for more efficient elimination of positional ambiguity that is often associated with conventional 2-D intersection line views. In addition, any misregistration between localizer scans can be detected immediately in the integrated 3-D display by misalignment of anatomy in the previously acquires image planes.

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